

FIG. 1

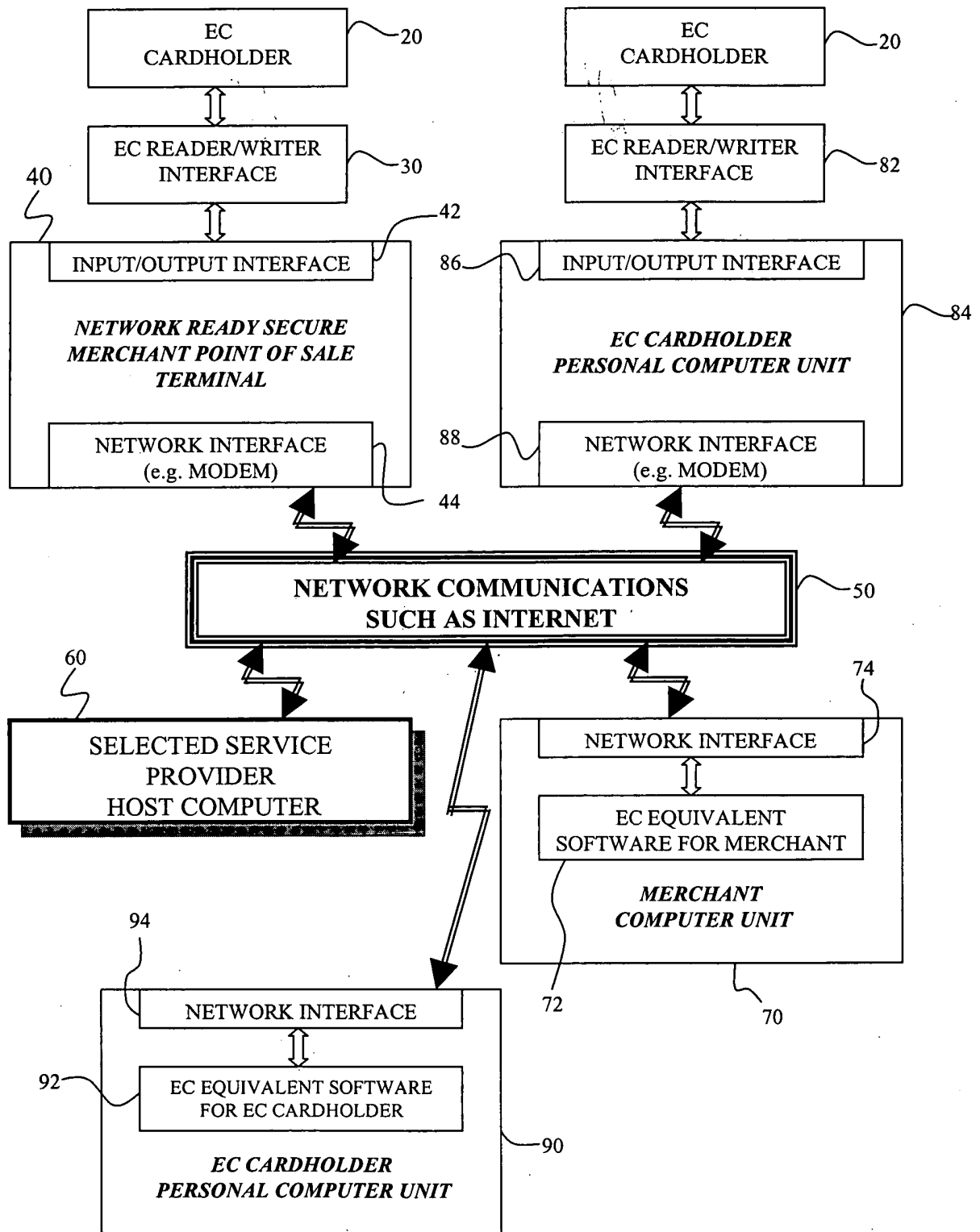
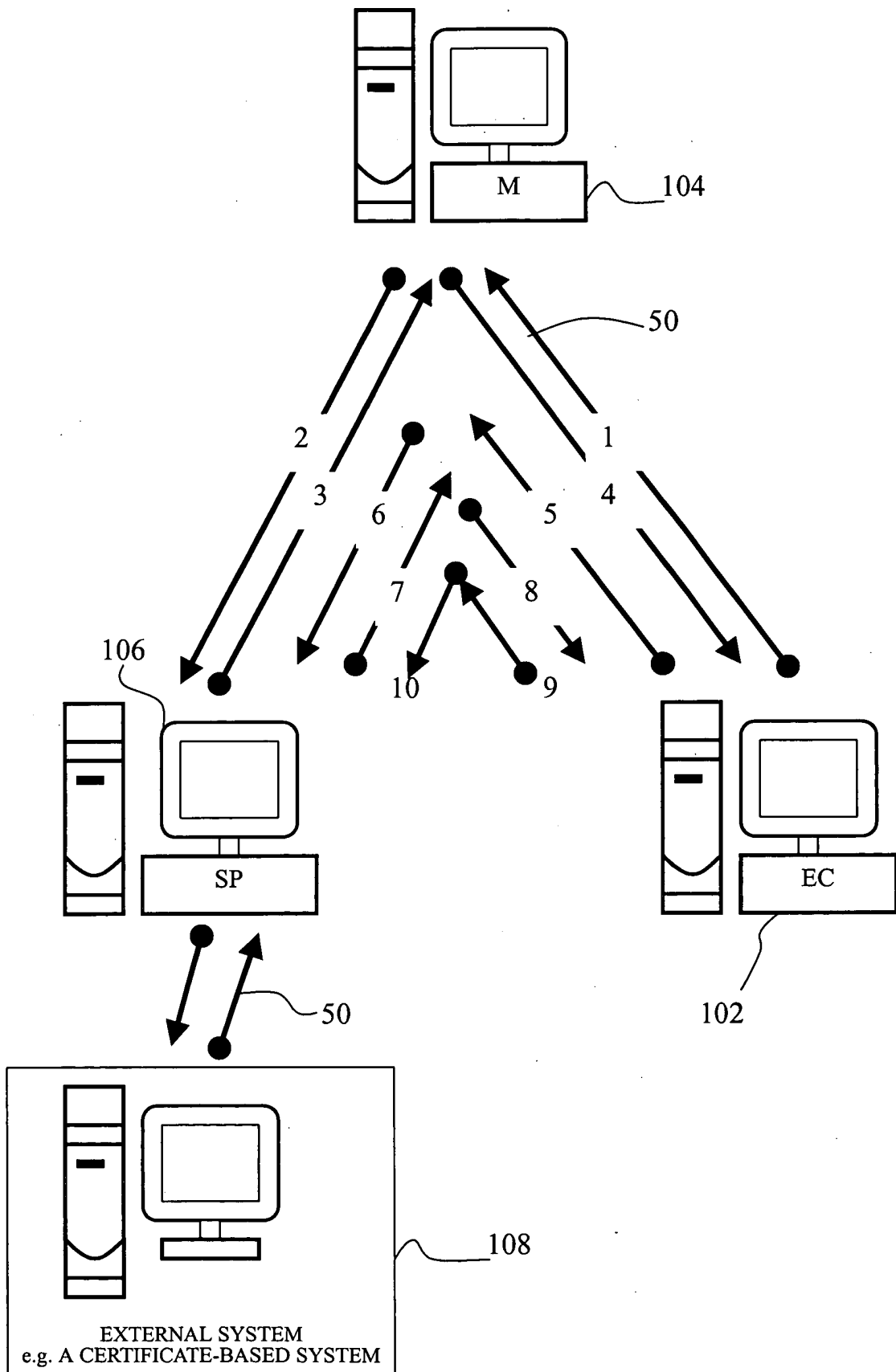
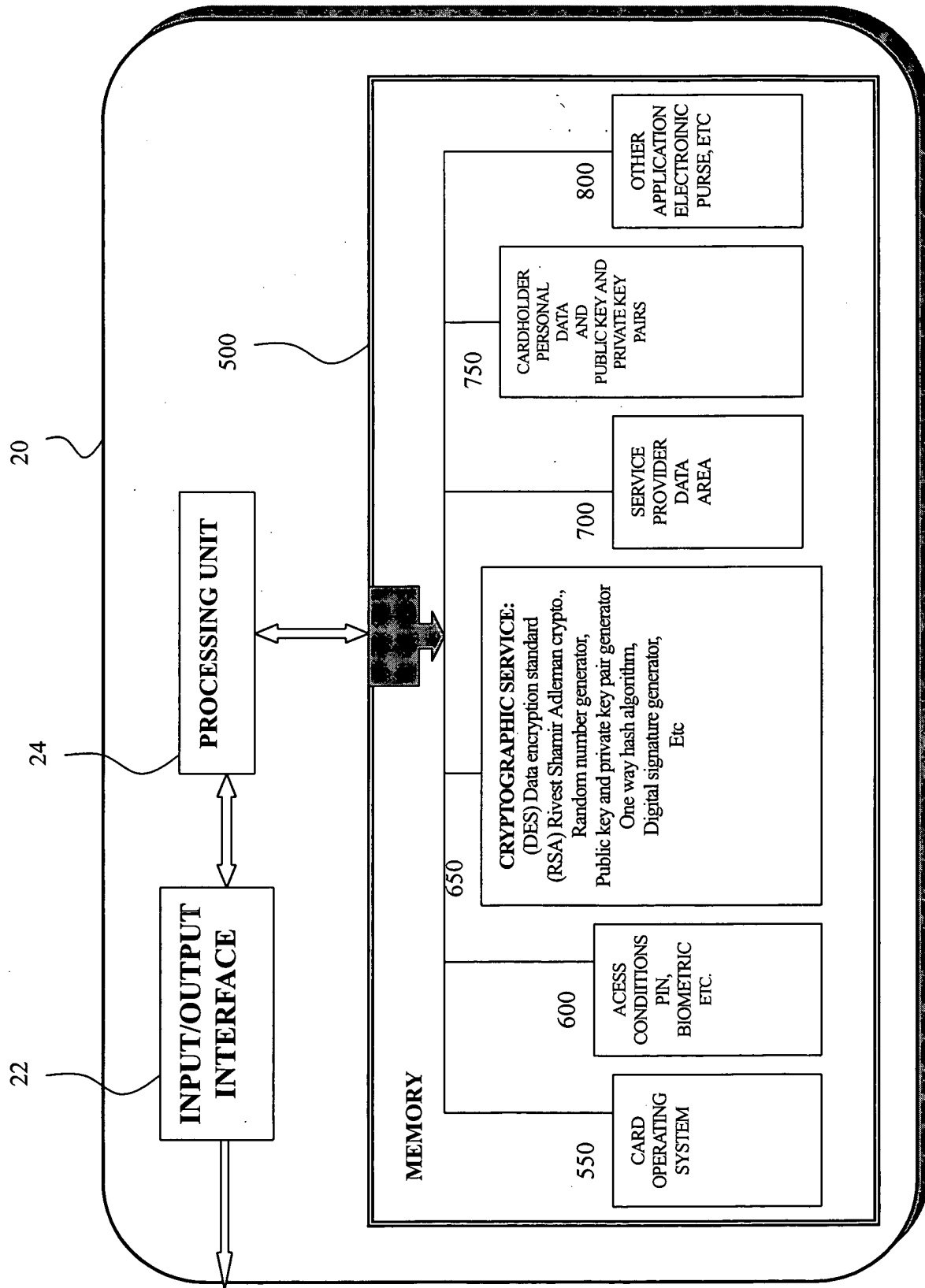


FIG. 2



09456794-120899

FIG. 3



ELECTRONIC CARD

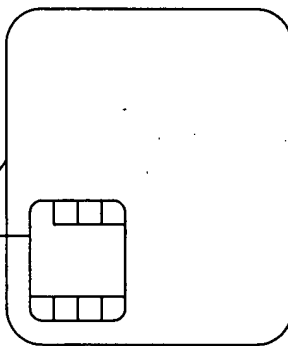
FIG. 4

700

5

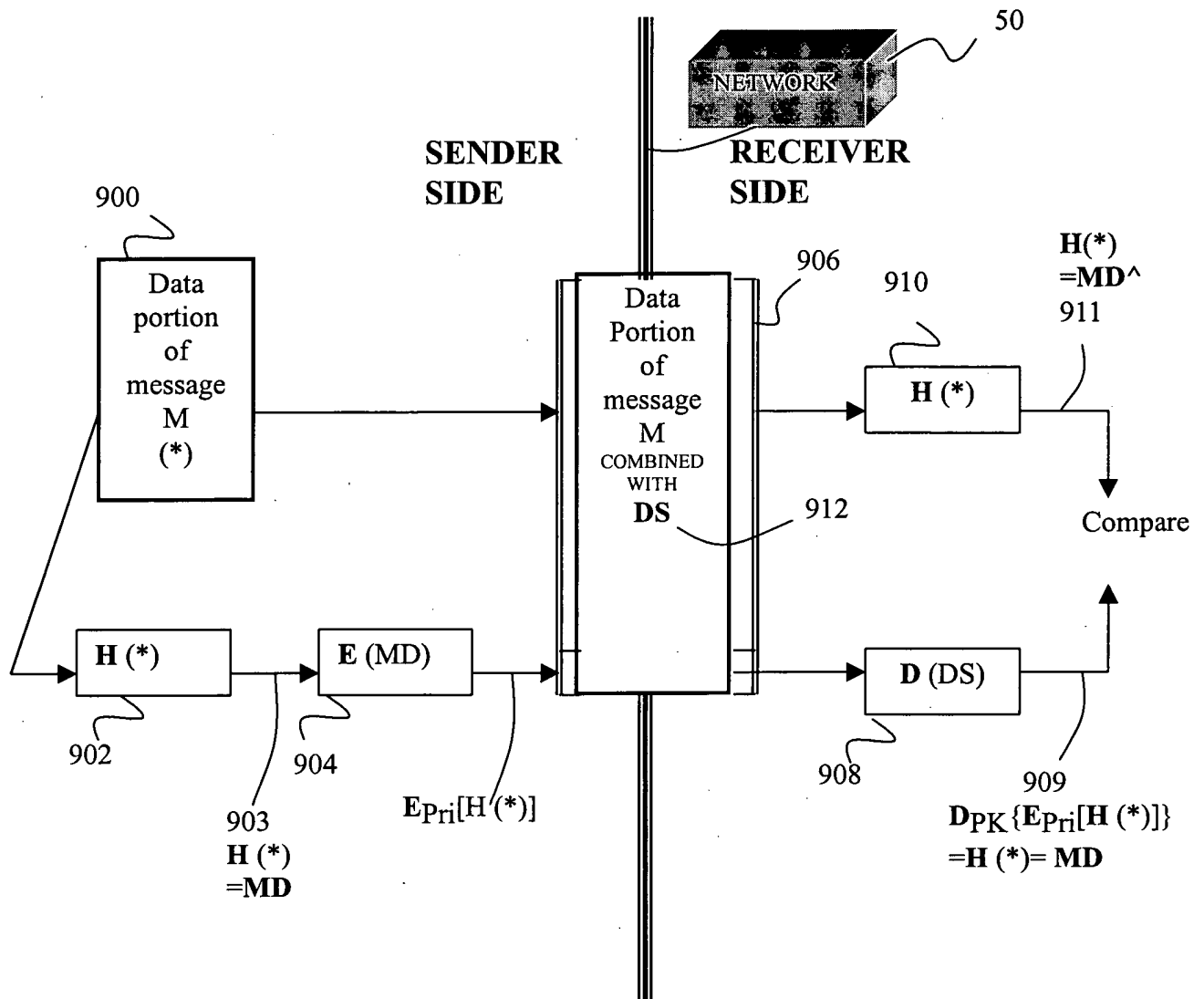
SERVICE PROVIDERS' DATA AREA (SPDA)						
702	704	706	708	710	712	714
NAME	KEY TYPE	KEY VALUE	ACCOUNT INFORMATION (Number, expiration date, etc.)	CARD TYPE	PIN (optional)	Miscellaneous Data
				CREDIT CARD		
				DEBIT CARD		
				ATM CARD		
				MEMBER CARD		
				LOYALTY CARD		
				etc.		

20



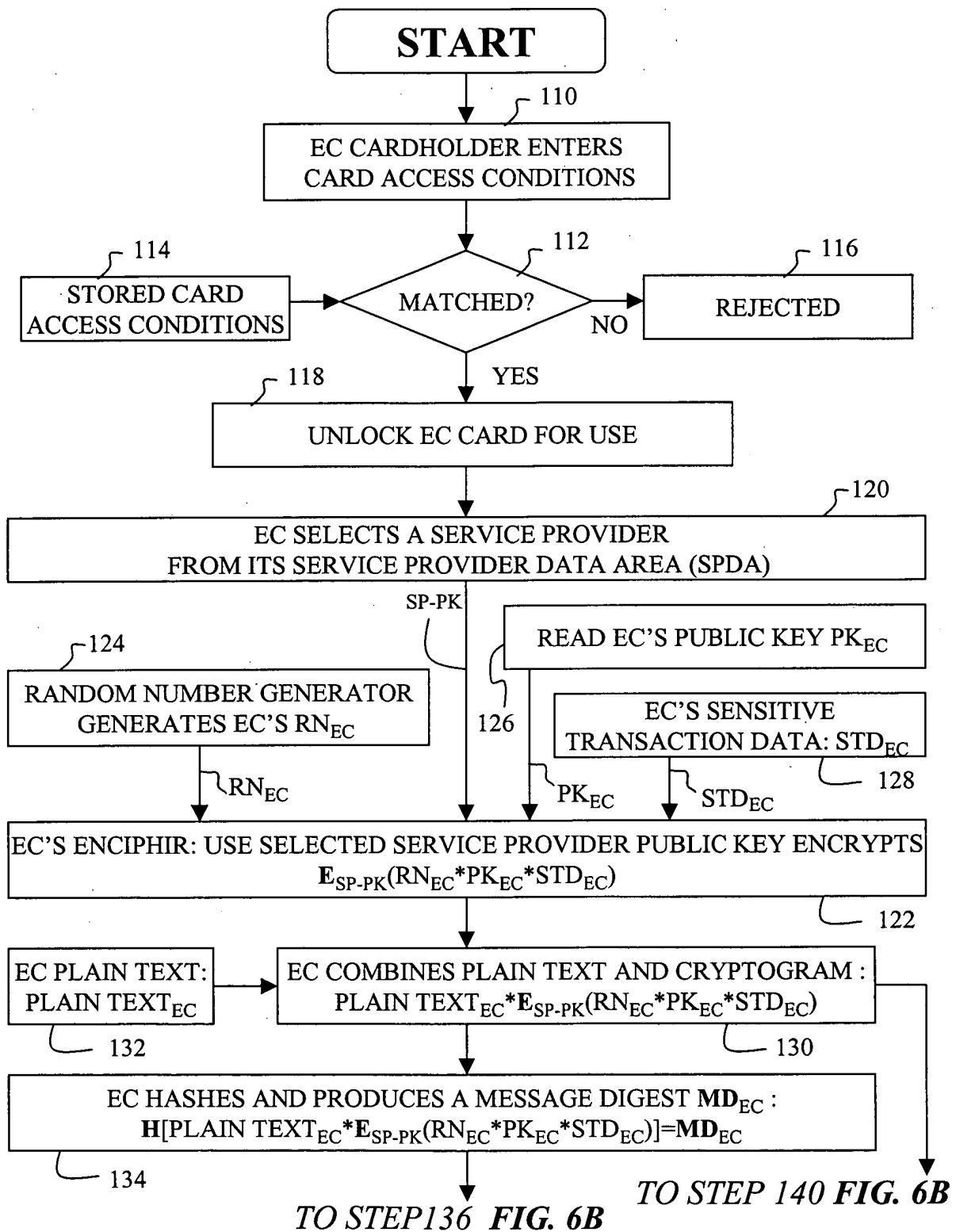
ELECTRONIC CARD

FIG. 5



668027-4649460

FIG. 6A



0456794-10000

FIG. 6B

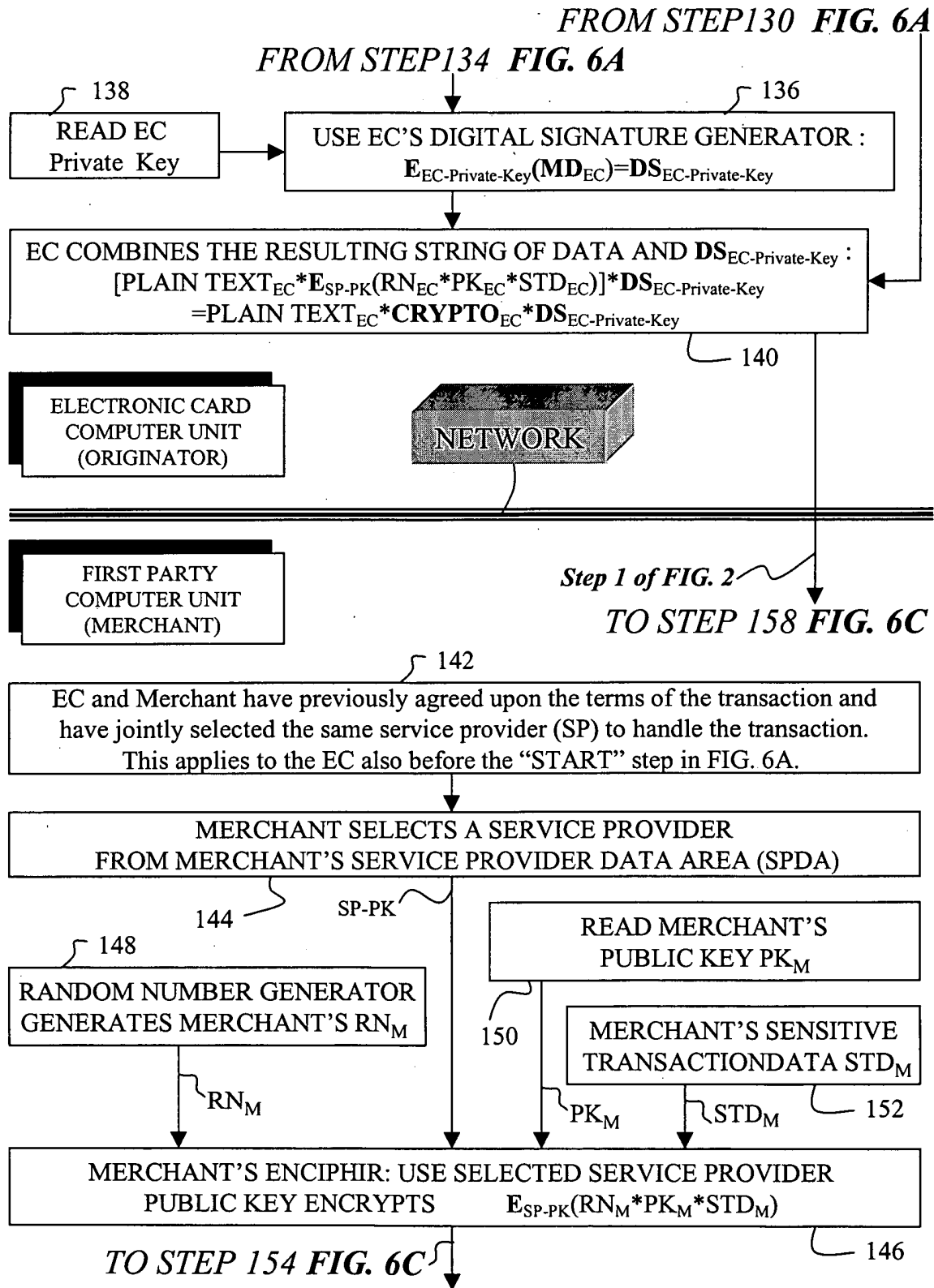


FIG. 6C

FROM STEP 146 FIG. 6B

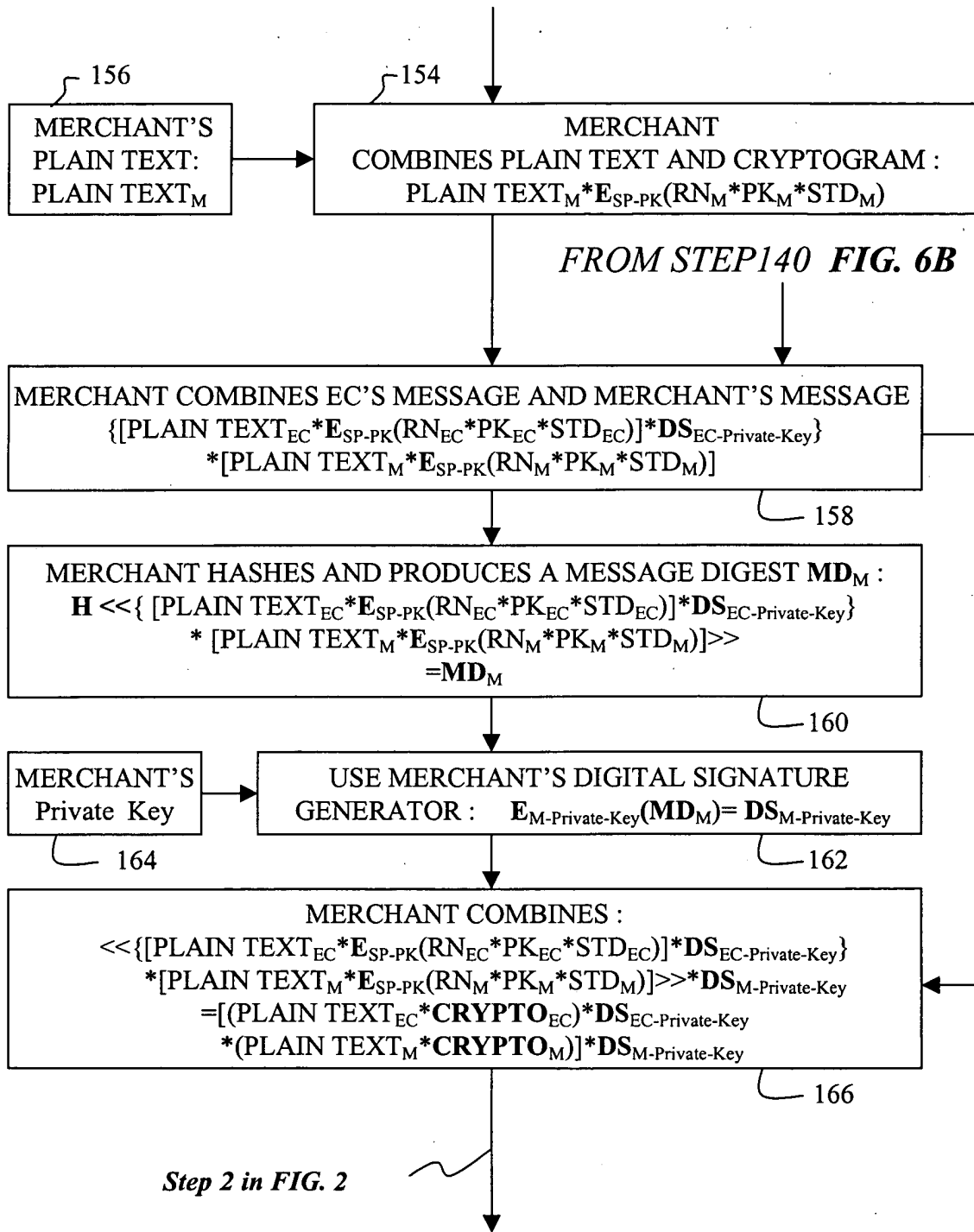


FIG. 6D

FROM STEP 166 FIG. 6C

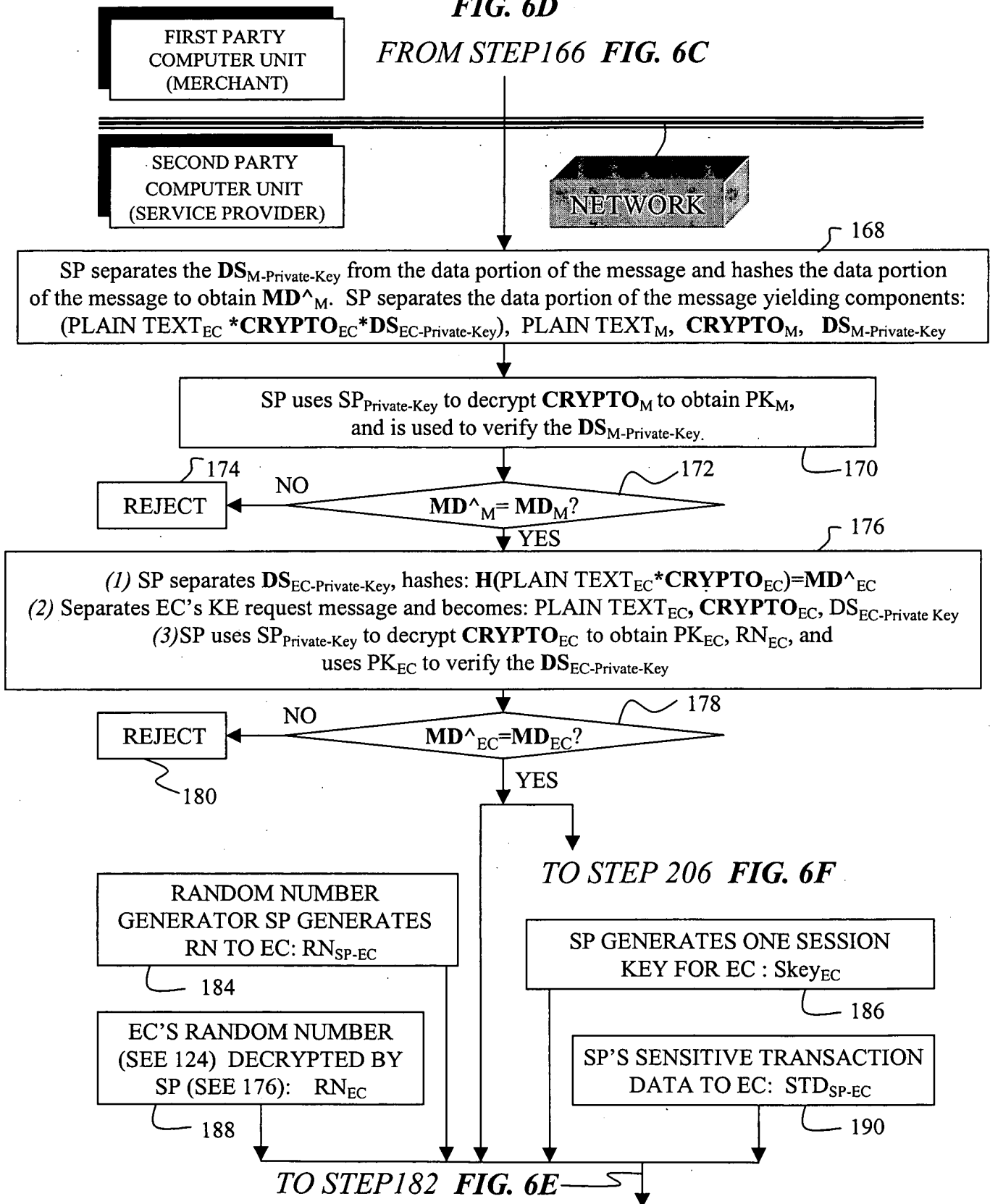
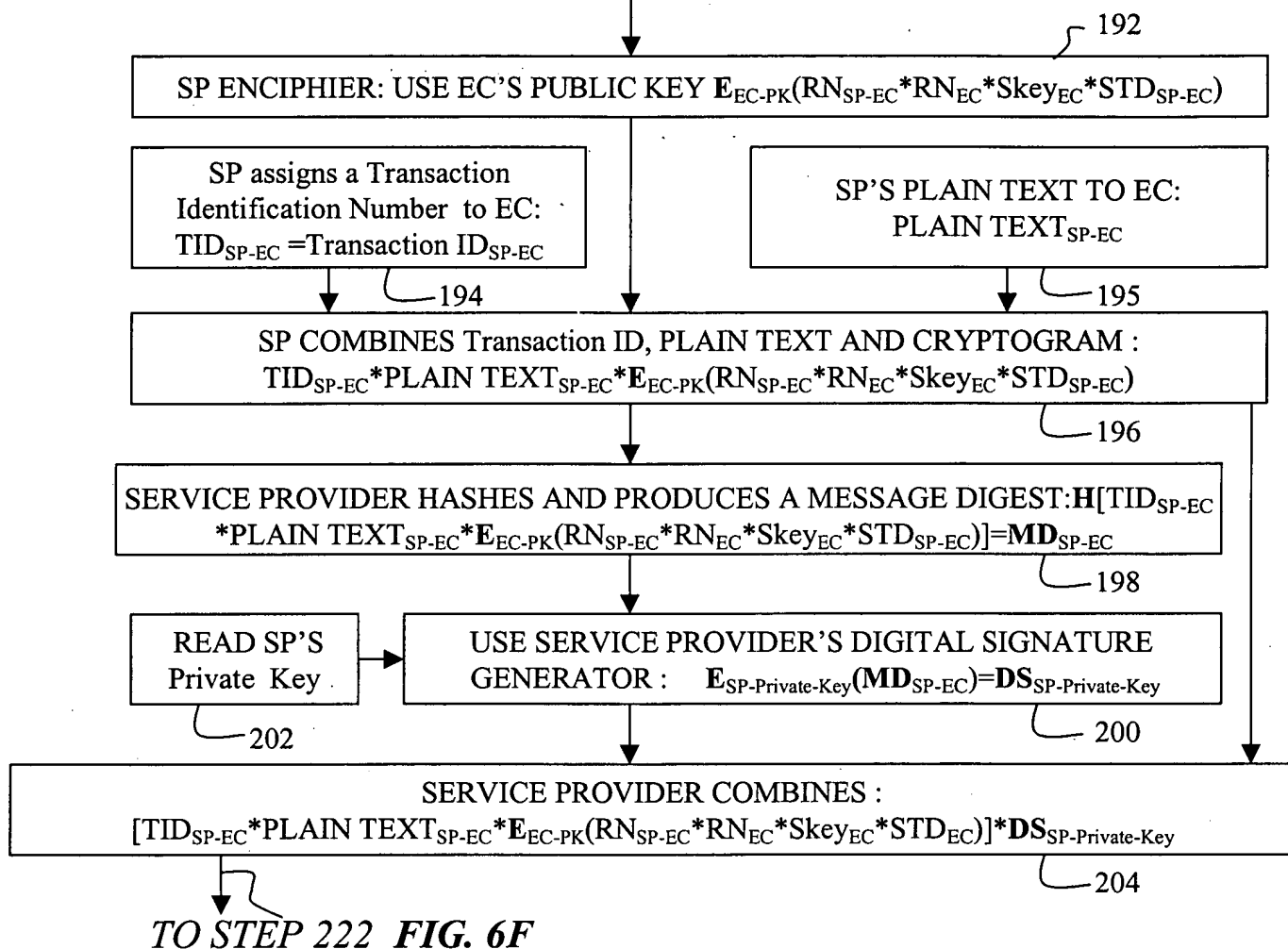


FIG. 6E

FROM STEPS 184,186,188,190 FIG. 6D



FROM STEP 178 FIG. 6D

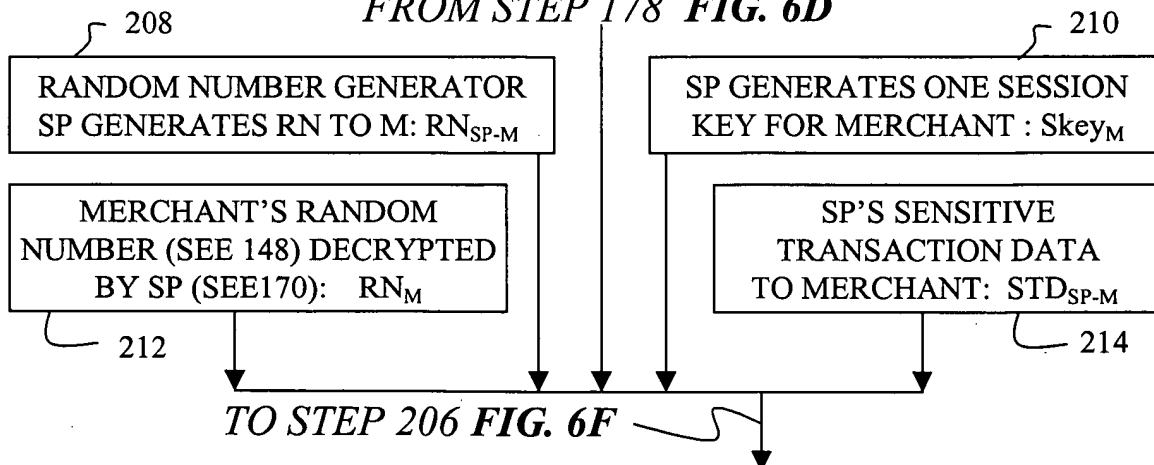
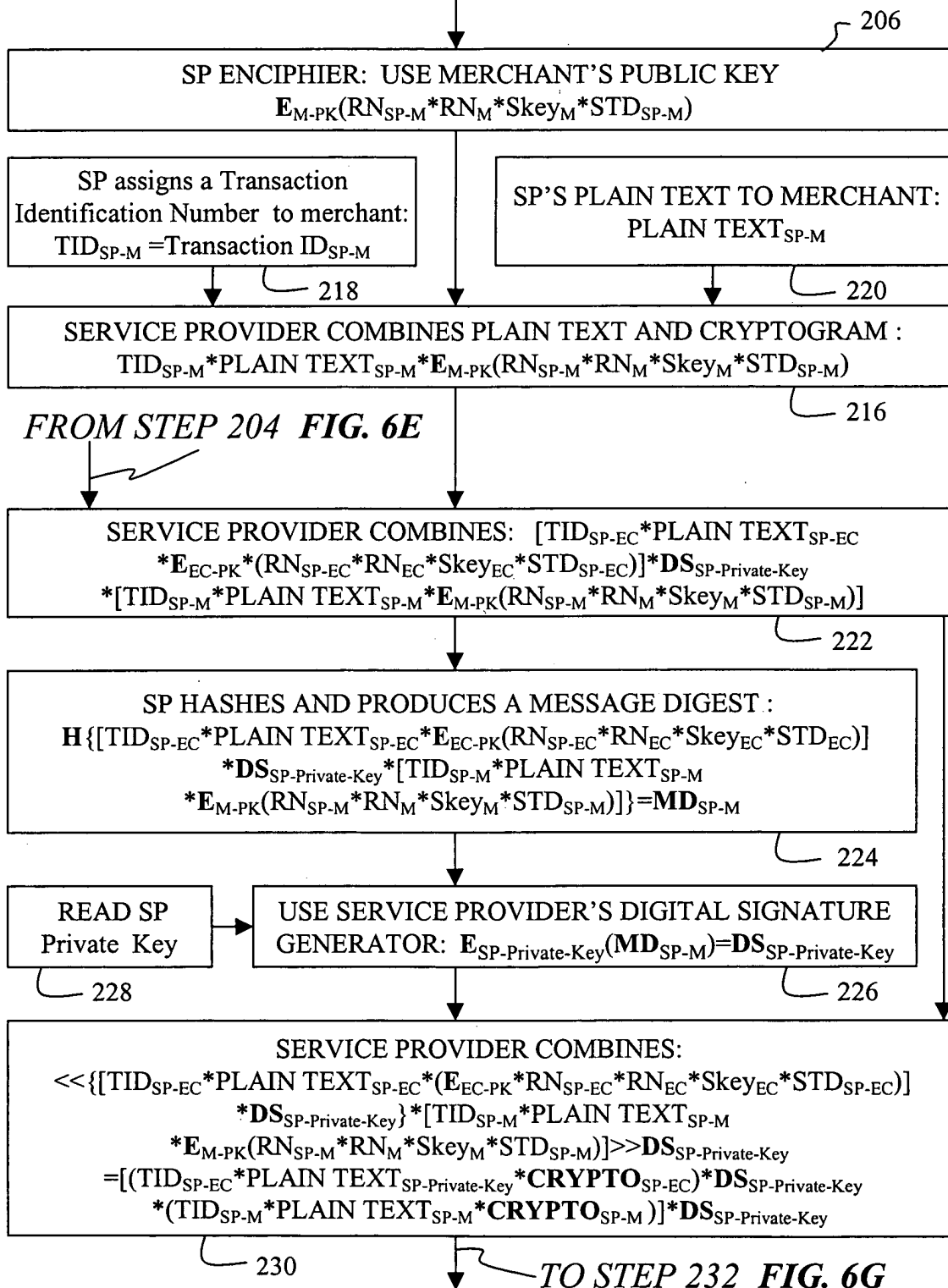


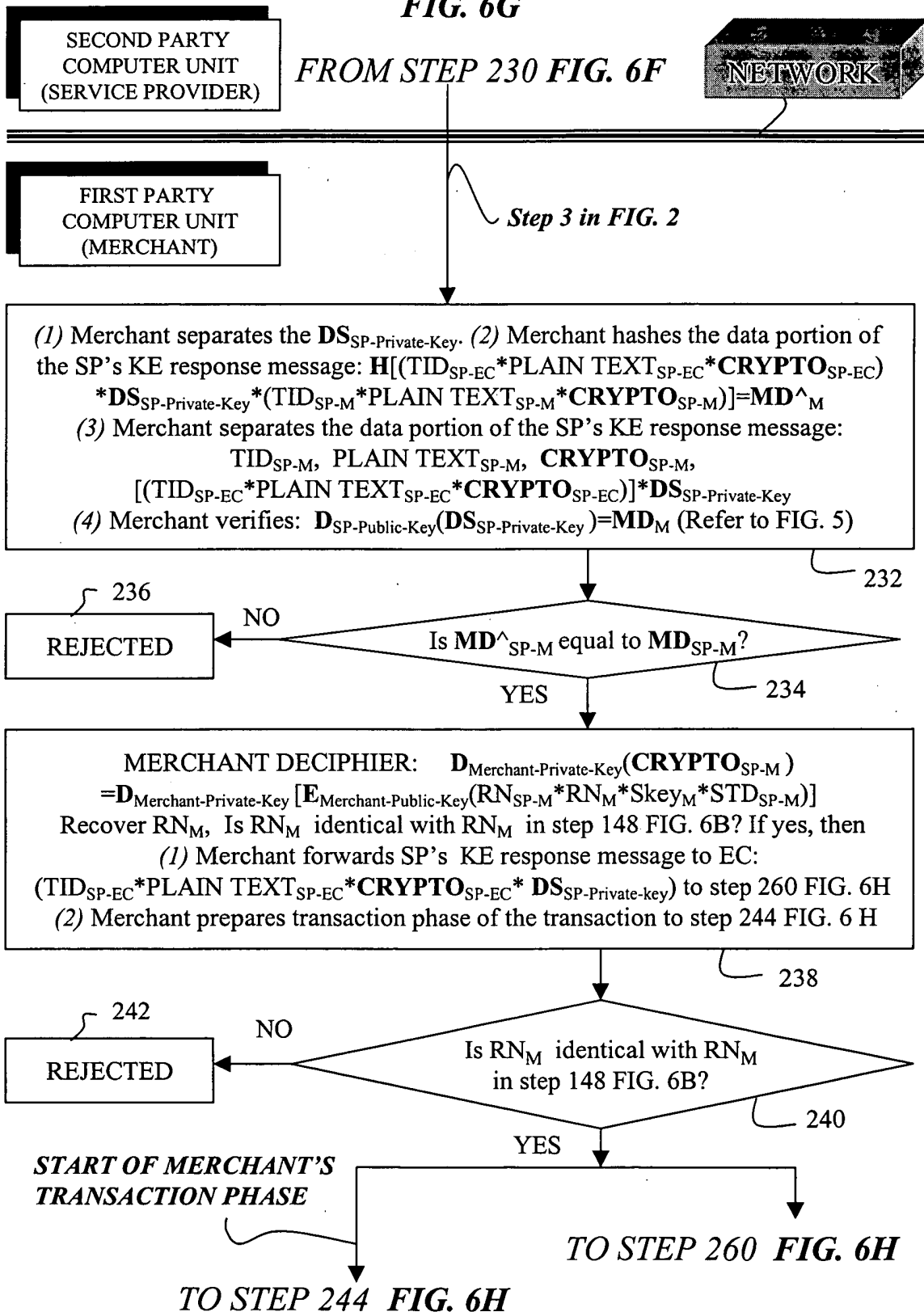
FIG. 6F

FROM STEPS 208, 210, 212, 214 FIG 6E



668027-1629460

FIG. 6G



09456794.120899

FIG. 6H

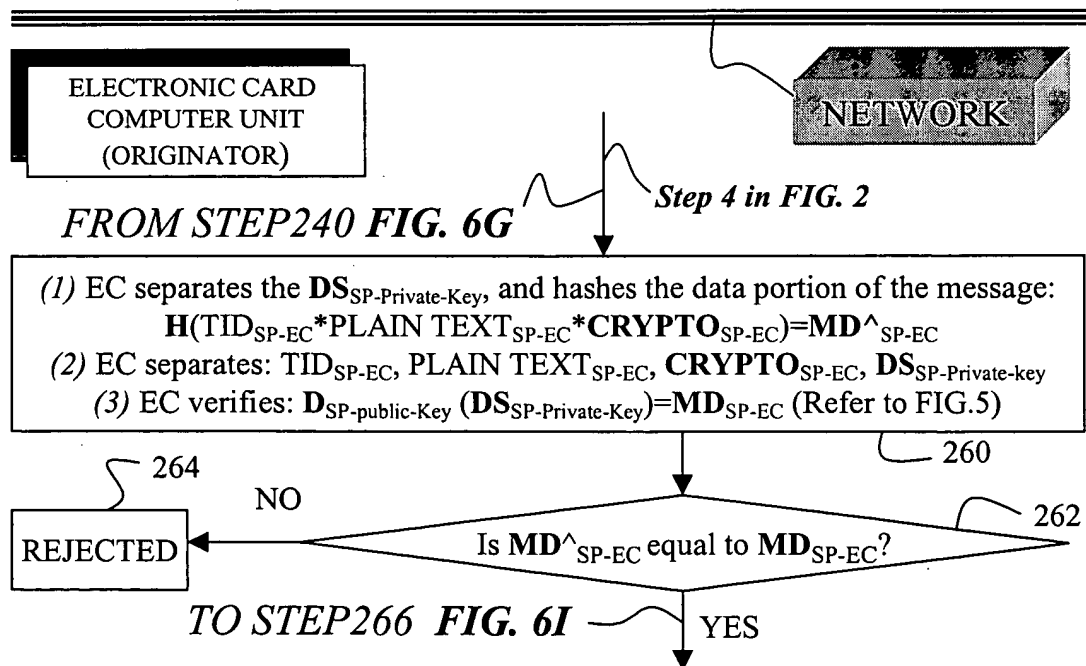
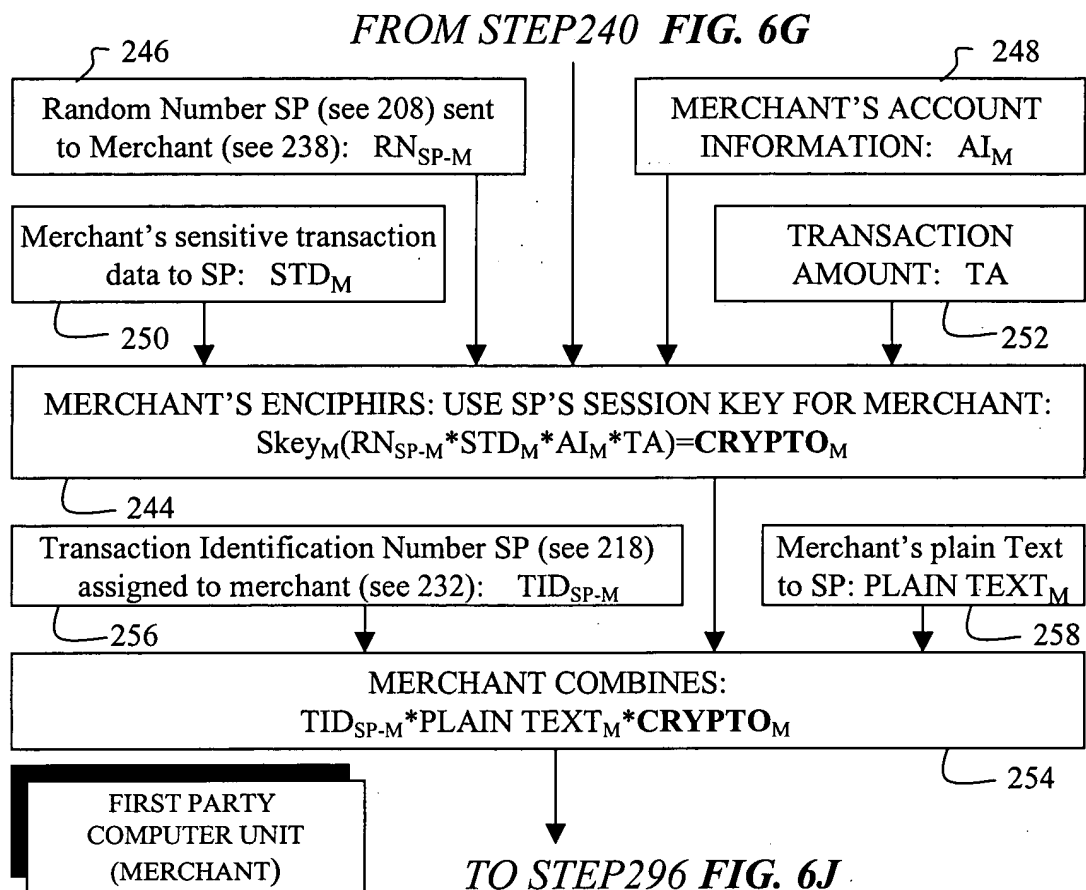
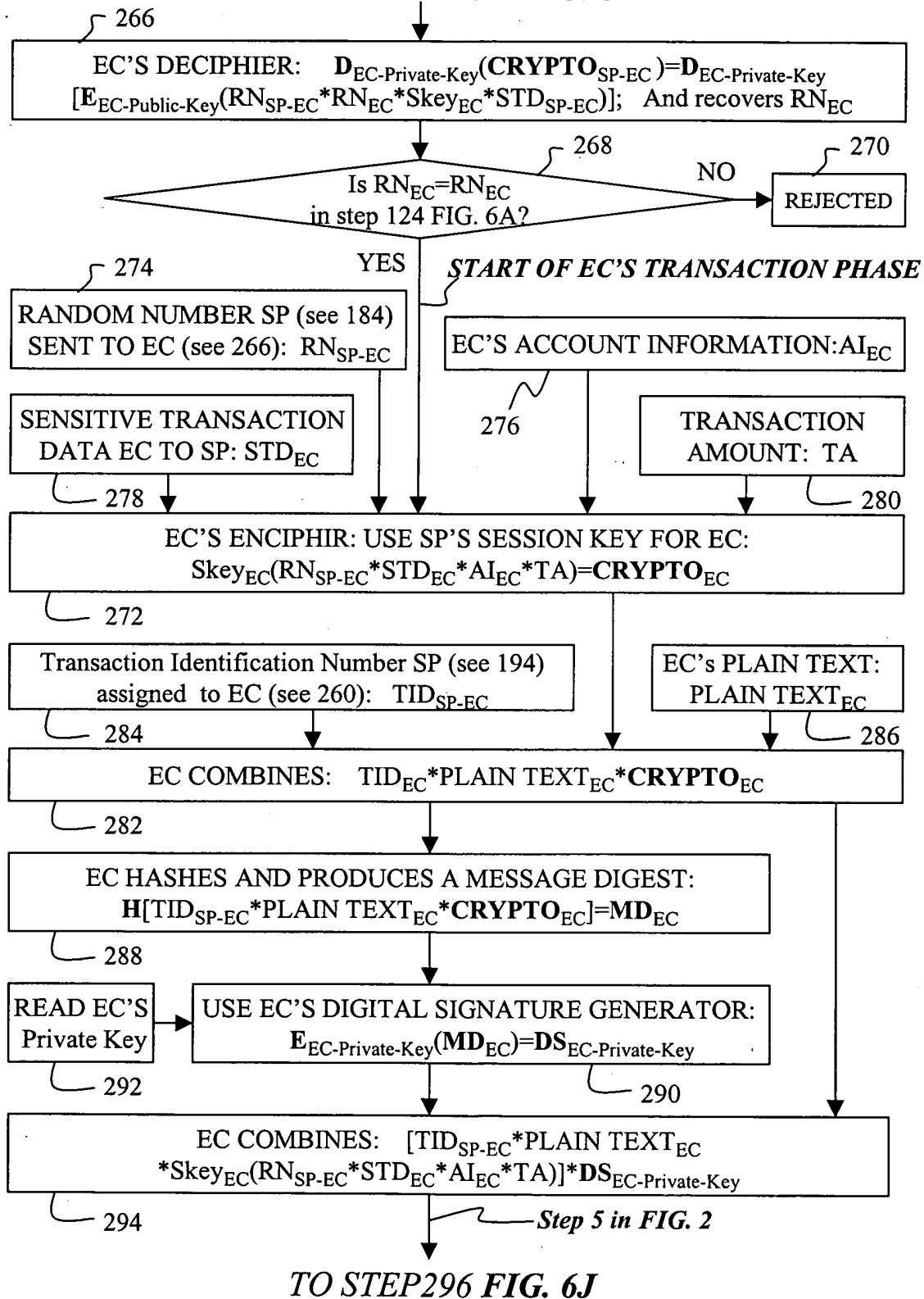


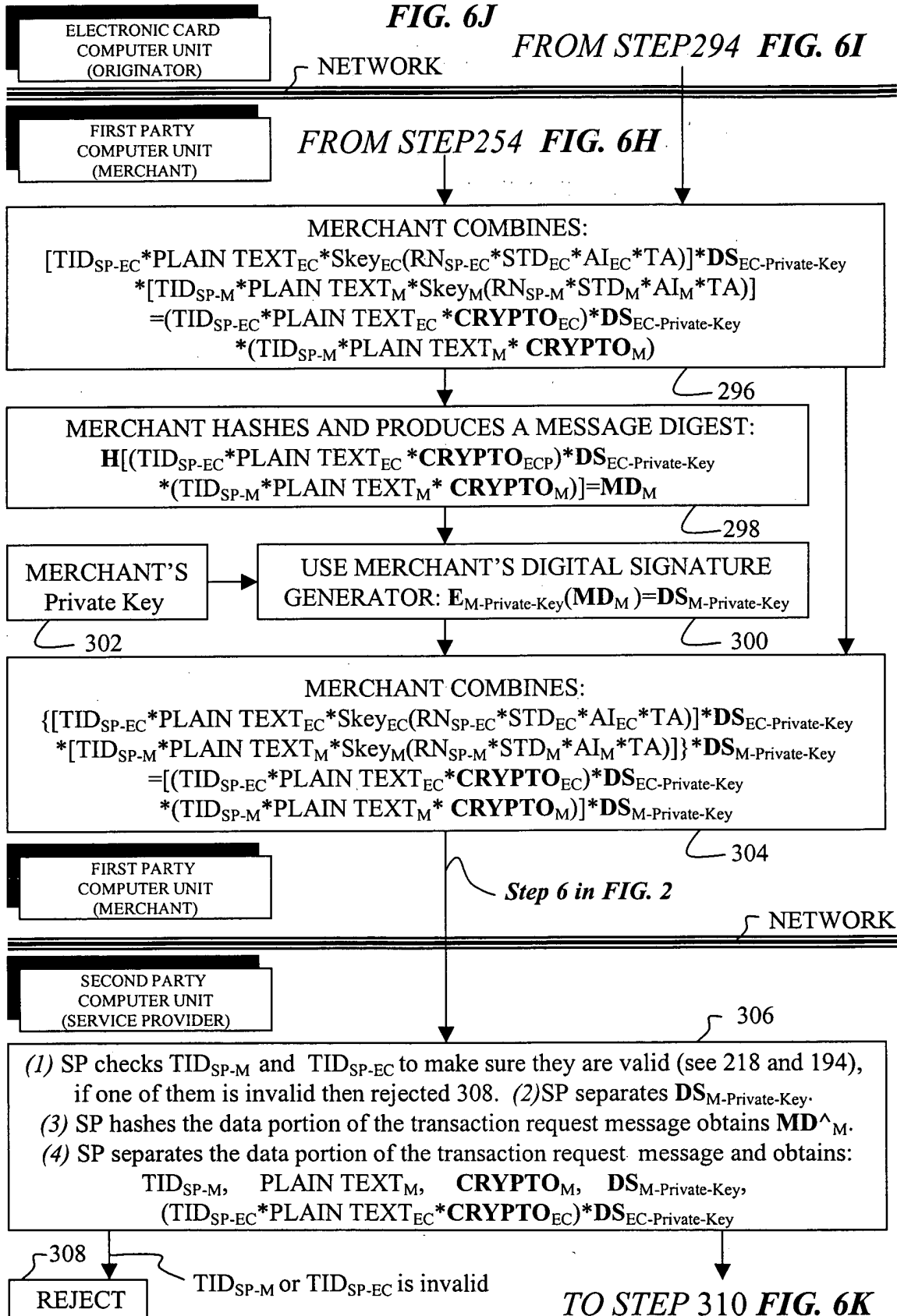
FIG. 6I
FROM STEP 262 FIG. 6H



0456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

FIG. 6J

FROM STEP 294 FIG. 6I



6530221-4629546D

FIG. 6K

FROM STEP 306 FIG. 6J

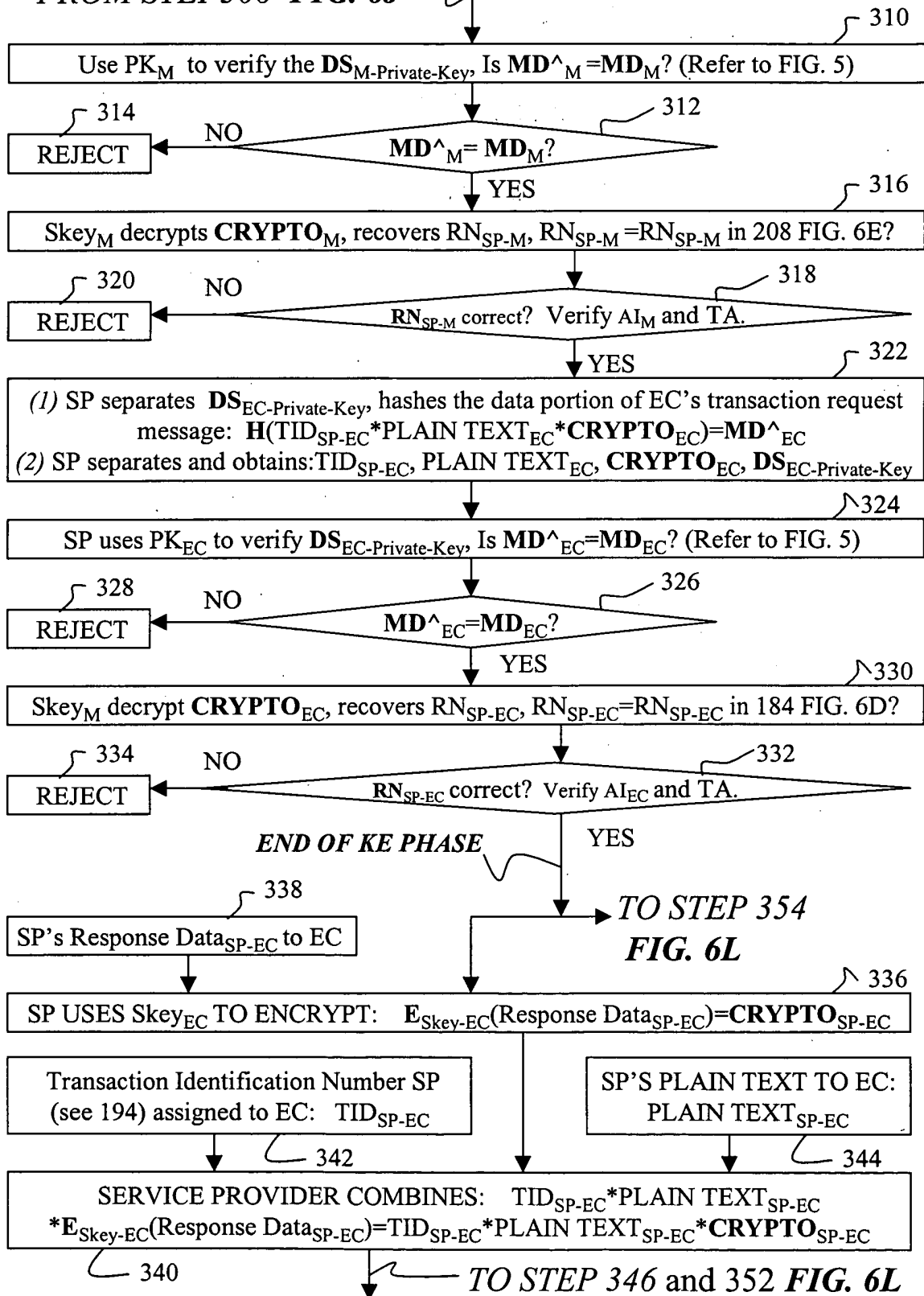


FIG. 6L

FROM STEP 340 FIG. 6K

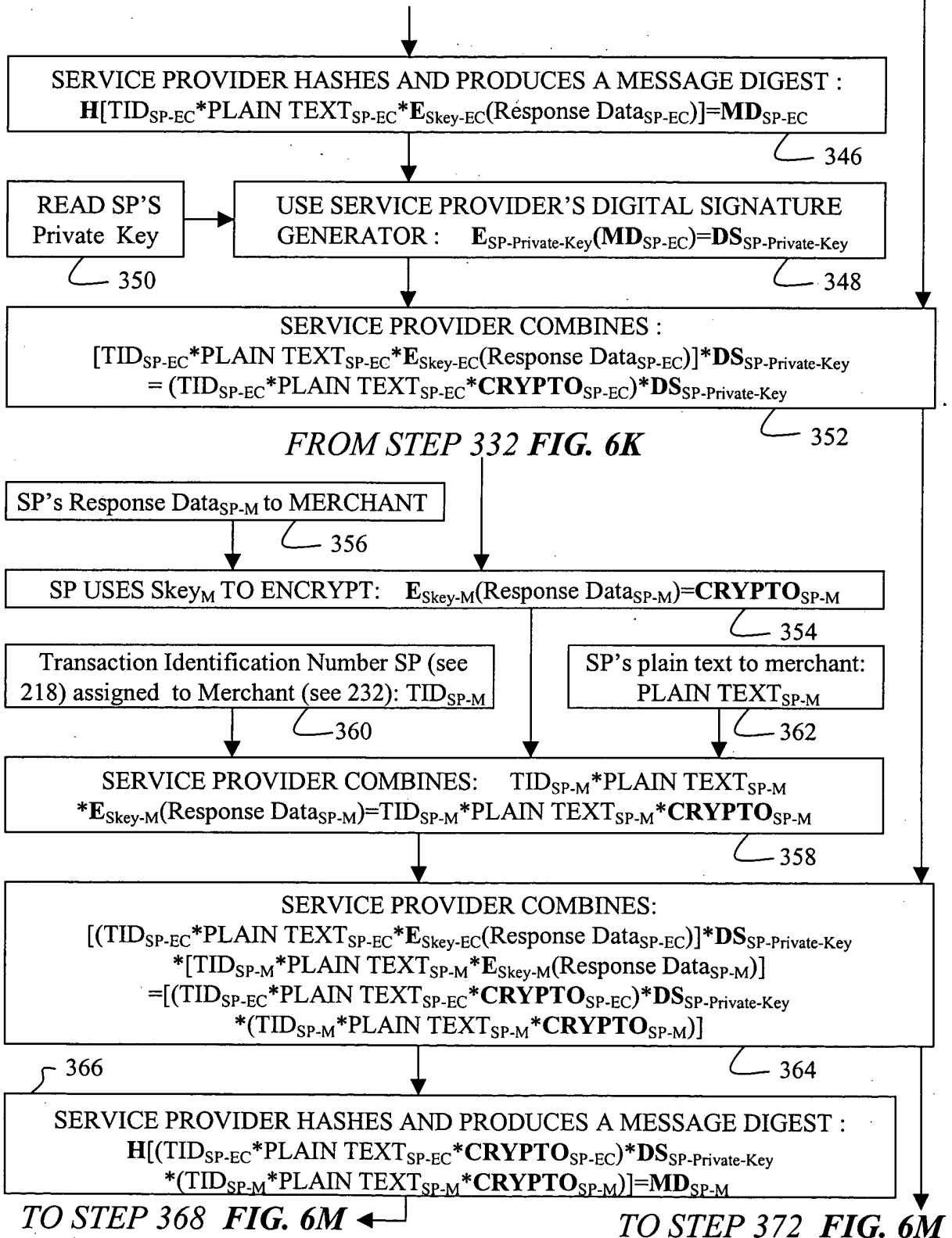
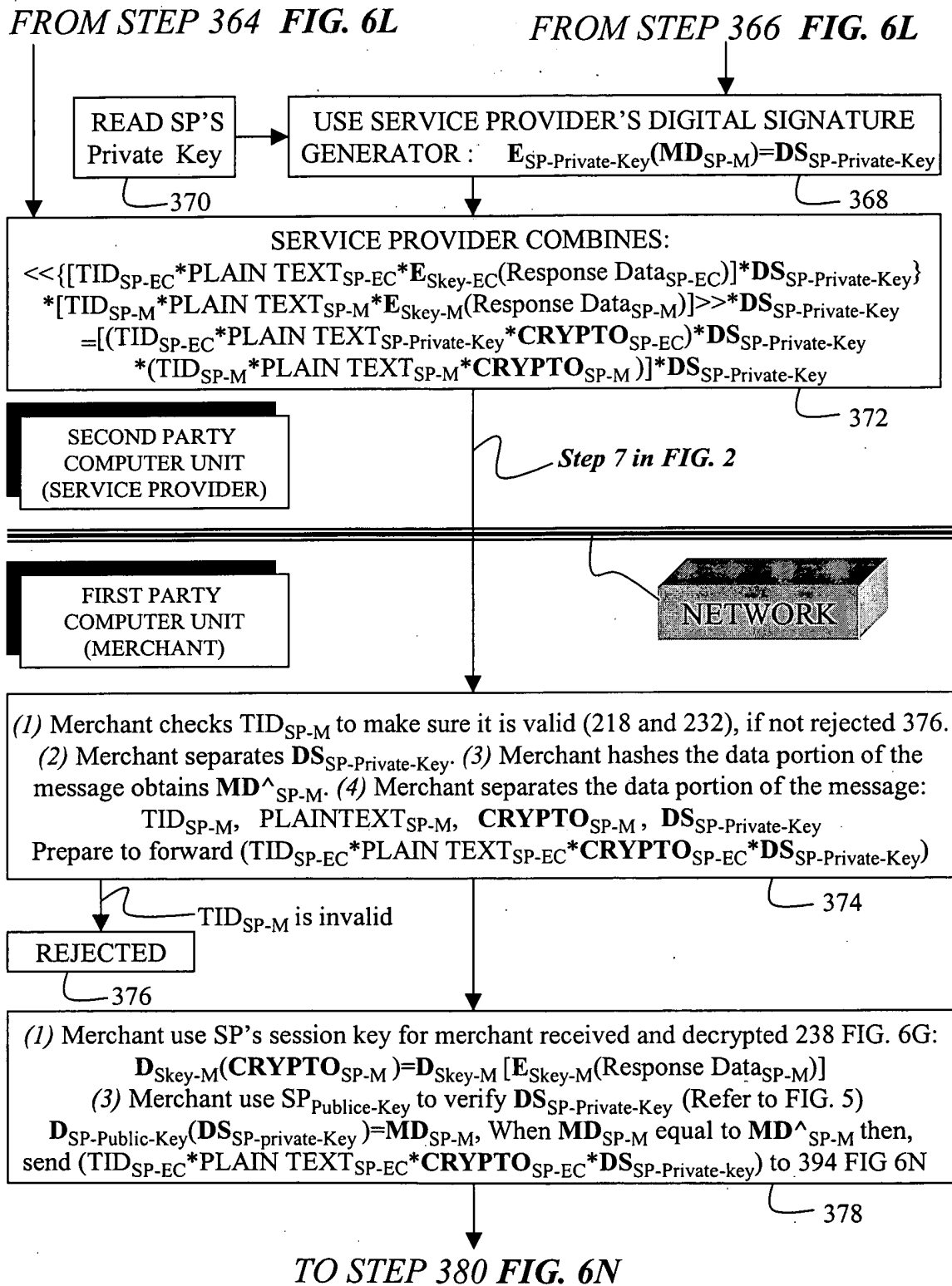
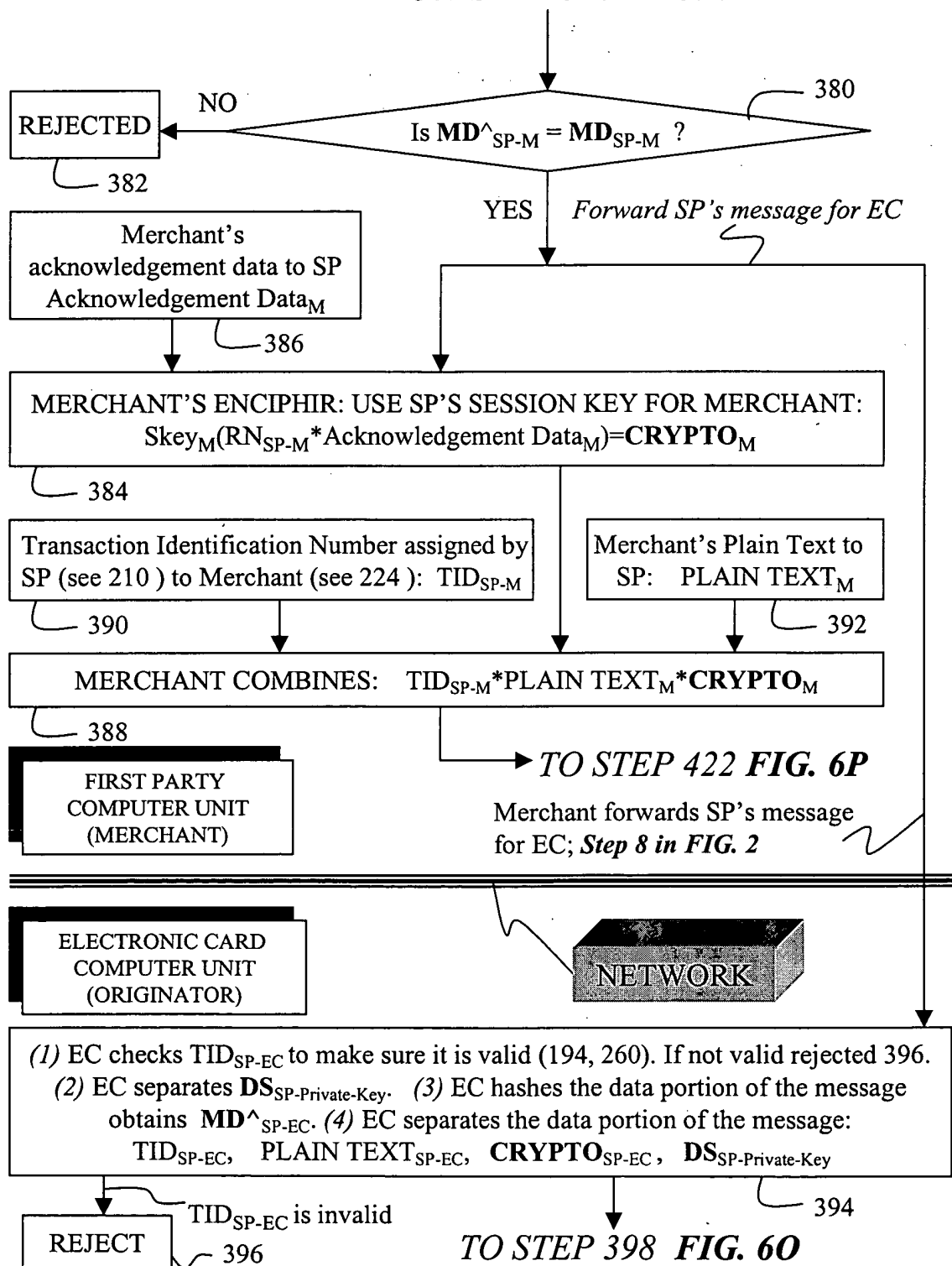


FIG. 6M



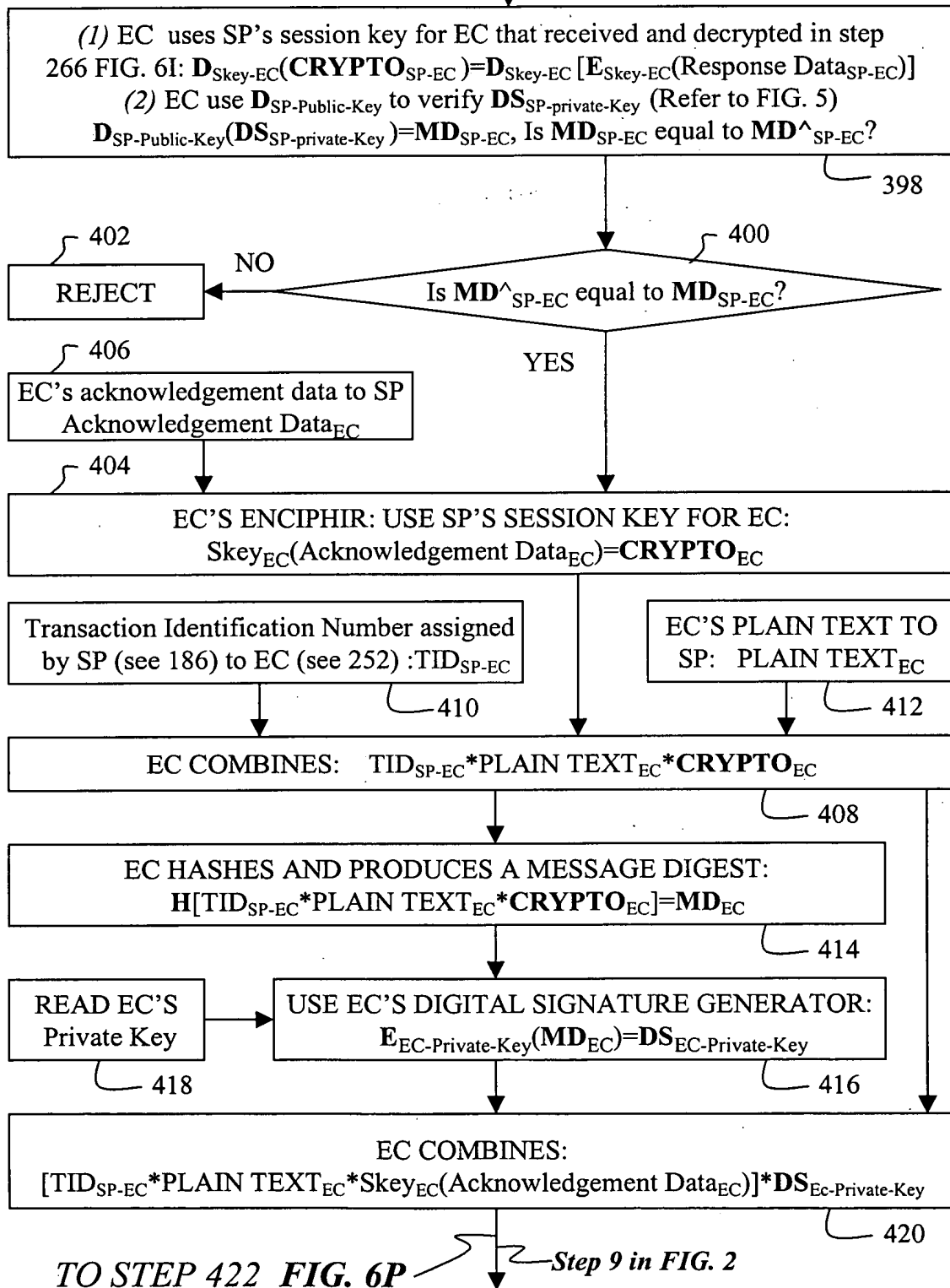
FROM STEP 370 FIG. 6M



0 9 2 6 7 1 0 8 9

FIG. 60

FROM 394 FIG. 6N



NETWORK7

$$\text{MERCHANT COMBINES : } \{[\text{TID}_{\text{SP-EC}} * \text{PLAIN TEXT}_{\text{EC}} * \text{Skey}_{\text{EC}}(\text{Acknowledgement Data}_{\text{EC}})] * \text{DS}_{\text{EC-Private-Key}}\} \\ * [\text{TID}_{\text{SP-M}} * \text{PLAIN TEXT}_{\text{M}} * \text{Skey}_{\text{M}}(\text{Acknowledgement Data}_{\text{M}})]$$

MERCHANT HASHES AND PRODUCES A MESSAGE DIGEST:

$$\mathbf{H} \ll \{ [\text{TID}_{\text{SP-EC}} * \text{PLAIN TEXT}_{\text{EC}} * \text{Skey}_{\text{EC}}(\text{Acknowledgement Data}_{\text{EC}})] * \mathbf{DS}_{\text{EC-Private-Key}} \} * [\text{TID}_{\text{SP-M}} * \text{PLAIN TEXT}_{\text{M}} * \text{Skey}_{\text{M}}(\text{Acknowledgement Data}_{\text{M}})] \gg = \mathbf{MD}_{\text{M}}$$

READ MERCHANT'S
Private Key

USE MERCHANT'S DIGITAL
SIGNATURE GENERATOR:
 $E_{M-Private-Key}(MD_M) = DS_{M-Private-Key}$

$$\begin{aligned} & \text{MERCHANT COMBINES:} \\ & \ll \{ [\text{TID}_{\text{SP-EC}} * \text{PLAIN TEXT}_{\text{EC}} * \text{Key}_{\text{EC}}(\text{Acknowledgement Data}_{\text{EC}})] \\ & \quad * \text{DS}_{\text{EC-Private-Key}} \} * [\text{TID}_{\text{SP-M}} * \text{PLAIN TEXT}_{\text{M}} \\ & \quad * \text{Key}_{\text{M}}(\text{Acknowledgement Data}_{\text{M}})] \gg * \text{DS}_{\text{M-Private-Key}} \\ & = \{ [(\text{TID}_{\text{SP-EC}} * \text{PLAIN TEXT}_{\text{EC}} * \text{CRYPTO}_{\text{EC}}) * \text{DS}_{\text{EC-Private-Key}}] \\ & \quad * (\text{TID}_{\text{SP-M}} * \text{PLAIN TEXT}_{\text{M}} * \text{CRYPTO}_{\text{M}}) \} * \text{DS}_{\text{M-Private-Key}} \end{aligned}$$

FIRST PARTY
COMPUTER UNIT
(MERCHANT)

SECOND PARTY
COMPUTER UNIT
(SERVICE PROVIDER)



NETWORK

FIG. 6Q

FROM STEP 430 FIG. 6P

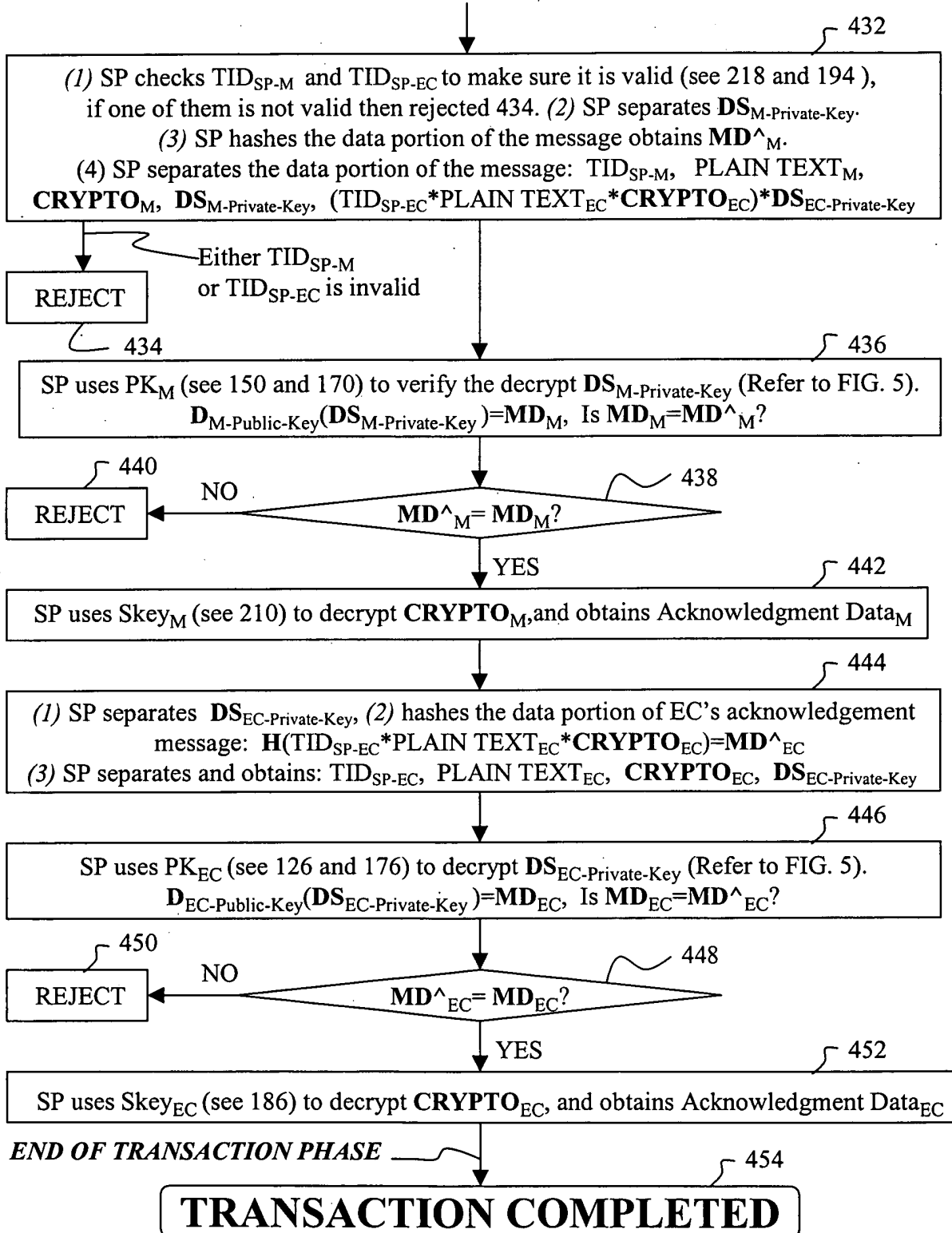


FIG. 7

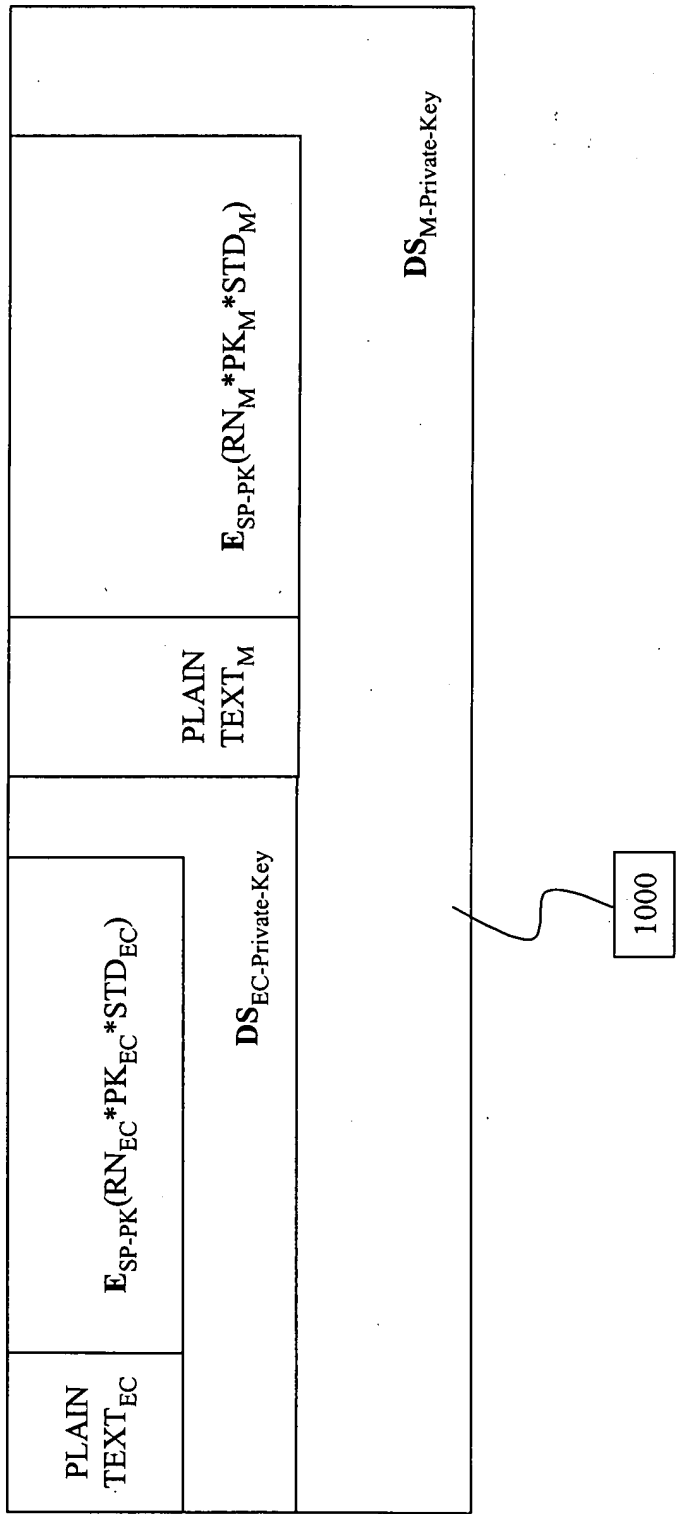
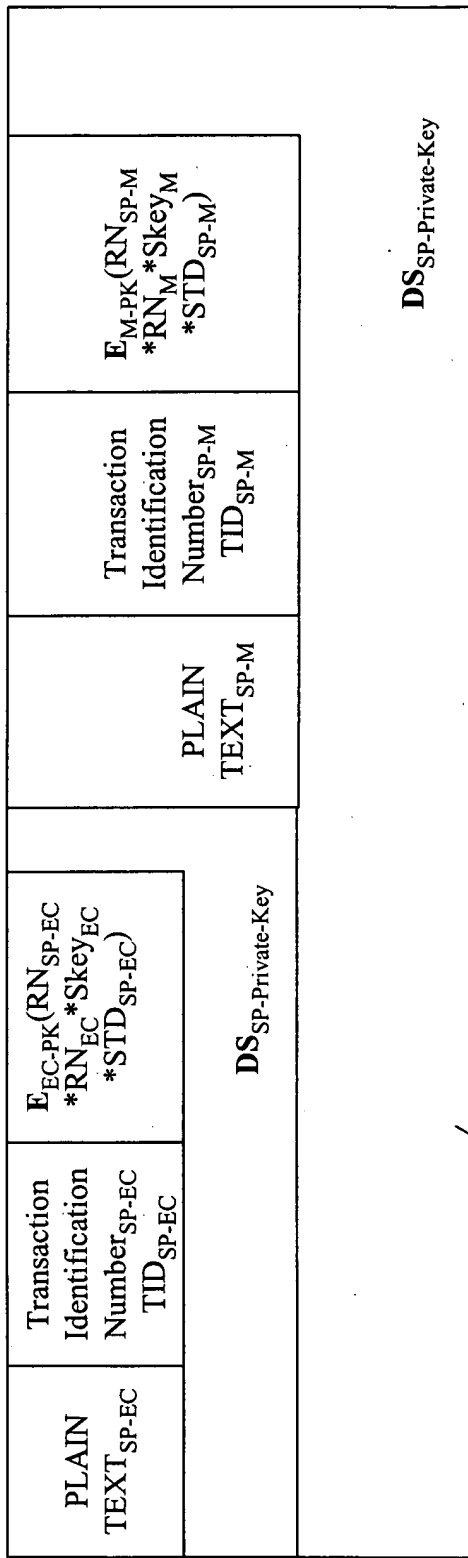
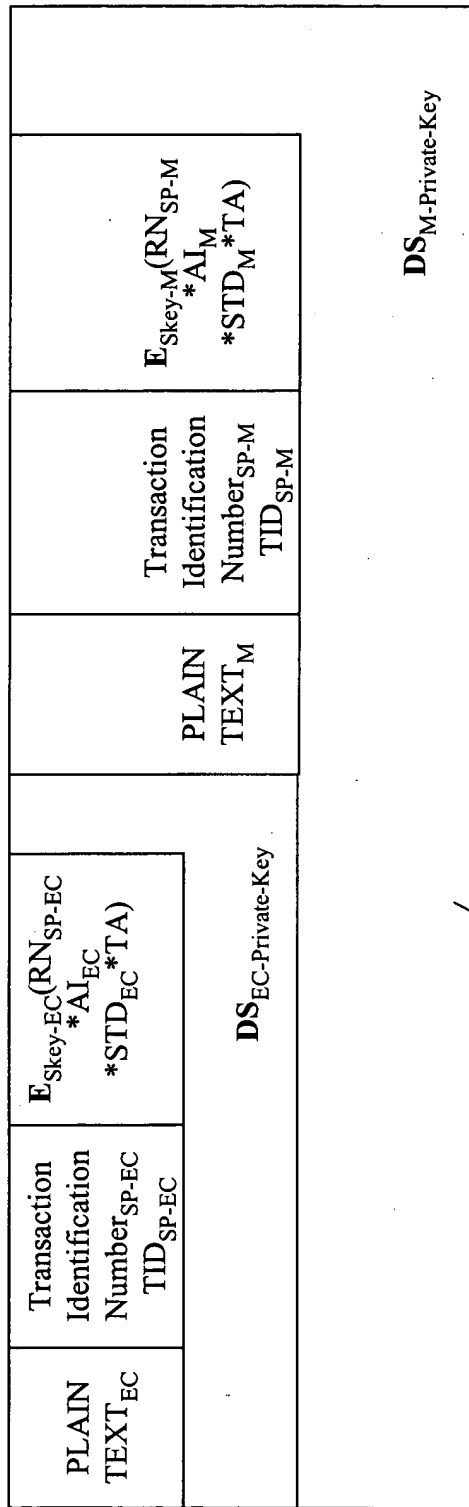


FIG. 8



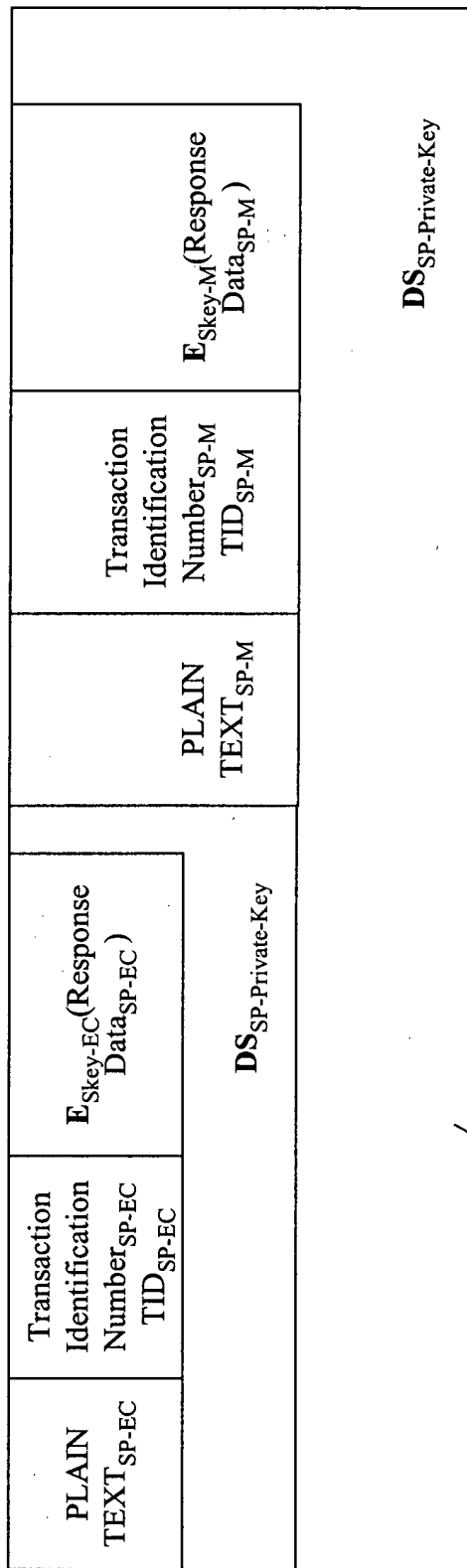
1020

FIG. 9



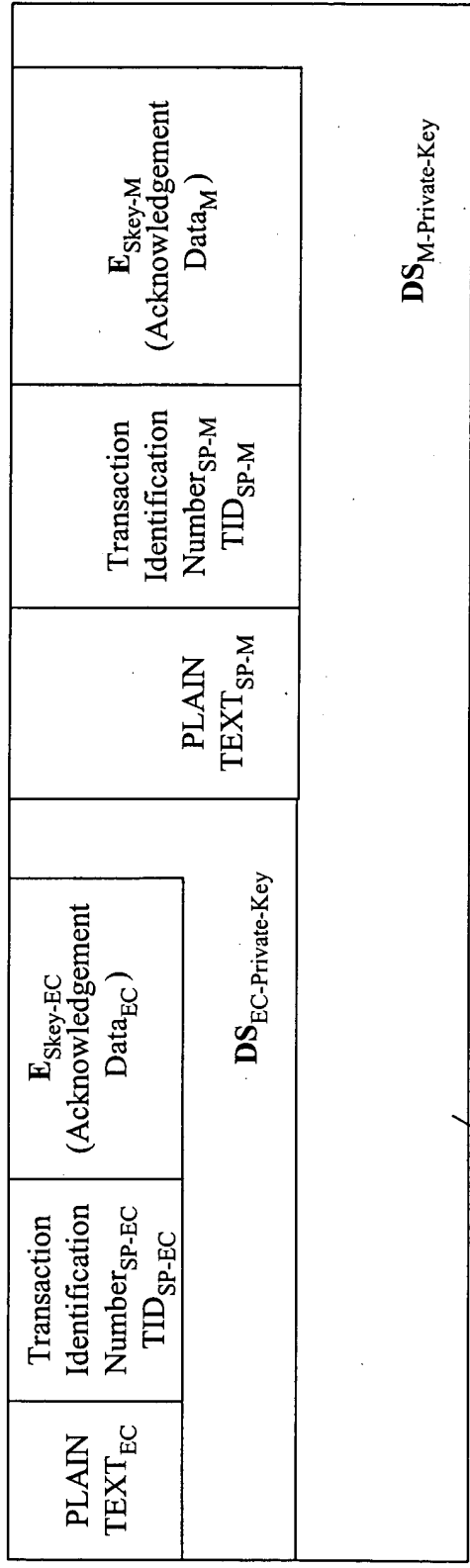
1040

FIG.10



1060

FIG.11



1080

FIG. 12

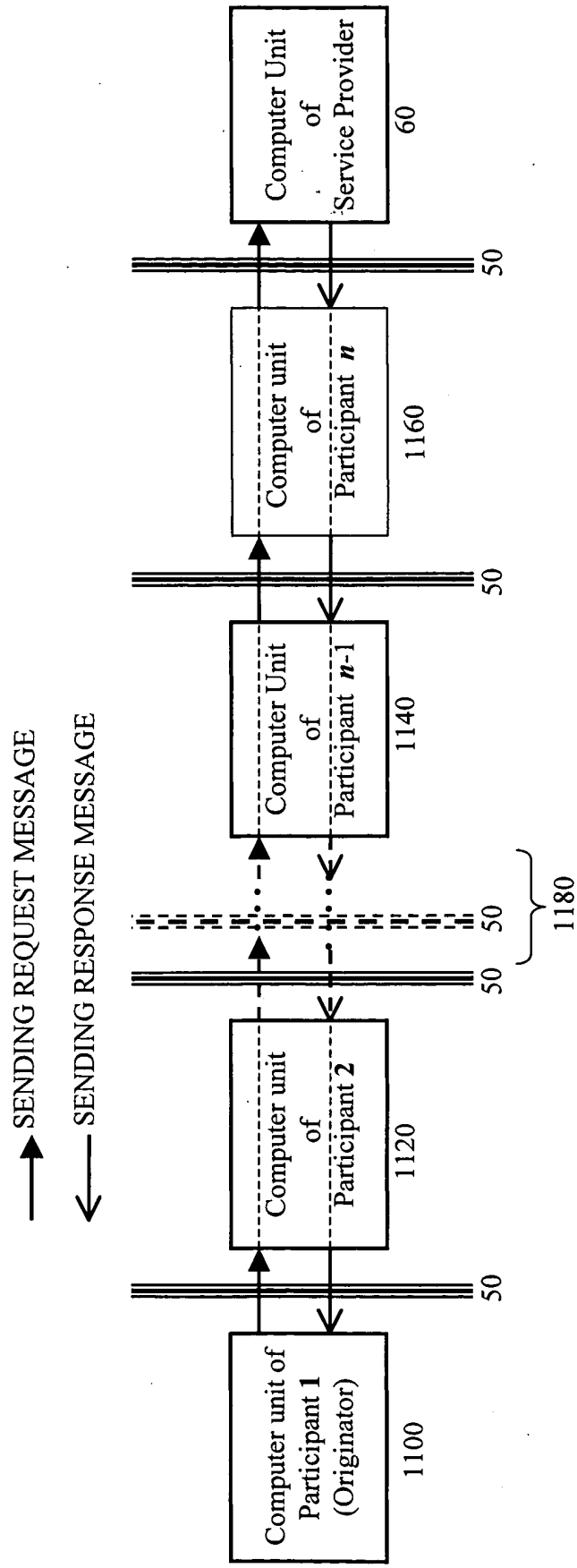


FIG. 13

